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April 25, 2003

MEMORANDUM TO: Peter Eselgroth, Chief, Branch 2
Division of Reactor Projects
Region I

FROM: Richard J. Laufer, Chief, Section 1 /RA/
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: REVIEW OF NATURAL GAS HAZARDS, INDIAN POINT NUCLEAR
GENERATING UNIT NOS. 2 AND 3 (TAC NOS. MB8090 AND MB8091)

After a meeting on March 3, 2003, a member of the public raised some questions regarding the safety of the natural gas pipelines that pass through the Indian Point site. Specifically, the individual questioned whether the fact that the pipelines are exposed at the shoreline of the river, at a distance of about 700 feet from the plant (i.e., Indian Point 3), was a safety concern. In a subsequent telephone conversation with the Region I staff, the individual also asked that the U.S. Nuclear Regulatory Commission (NRC) provide him with a discussion of the vulnerability that these lines may pose to the nuclear units in the event of a terrorist act or sabotage. The individual based his concern on the consequences from a natural gas pipeline break and fire that occurred in New Mexico in August 2000. He speculated that a similar, or even more significant, event could occur at Indian Point due to a terrorist-initiated incident.

As you are aware, the Indian Point site is traversed by two natural gas pipelines owned and operated by the Algonquin Gas Transmission Company. The pipelines are 26" and 30" in diameter and operated at a pressure of 600-650 psig and 600- 750 psig, respectively. The two lines are buried about 3 ft. deep in a trench formed in excavated rock. Portions of the pipelines near the site access road and at the shoreline of the Hudson river exit the trench and are exposed. The nearest approach of the pipelines to safety related structures is about 400 ft. The nearest exposed portion is approximately 800 ft. from the nearest safety-related structure (diesel generator building).

At the request of Region I, the Office of Nuclear Reactor Regulation (NRR) staff reviewed the prior evaluations of the lines as they may pose an external hazard to the safe operation of the facility. The external hazards reviews completed during initial licensing of each unit, and also in the early 1980s, found that the natural gas lines posed a very low risk to the facility because of the low probability of an accidental pipe leak or rupture. The same conclusion was reached by Consolidated Edison of New York in its Individual Plant Examination of External Events (IPEEE) for Indian Point 2. However, the New York Power Authority (NYPA) in its IPEEE for Unit 3 reviewed the consequences of fire and vapor cloud explosions on plant structures and systems. Although NYPA stated in the Indian Point 3 IPEEE that vapor cloud explosion could subject structures to overpressures above 1 psi, the probability of an accidental leak from the line was extremely low. Because of the statements made in the Indian Point 3 IPEEE, and the focus of prior external hazards evaluations on probability of accidental pipe failure rather than consequences, the NRR staff made an assessment of the risks associated with the potential for

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large releases of natural gas from the pipelines in the vicinity of Indian Point 3. The NRR staff also considered intentional acts to damage the line(s) in this review.

The details of the NRR review are provided in the attached gas pipeline hazard assessment. For a large rupture and resulting fire, the staff found that safety-related structures would not be significantly affected. For unconfined vapor cloud explosions, the staff found that the factors involved to achieve an explosion creating sizeable overpressures make the probability for occurrence very low. However, the NRR staff believes that this aspect should be further evaluated by the Office of Nuclear Safety and Incident Response in conjunction with Region I.

Because of the sensitivity of the information presented in the assessment, the assessment should be handled as "sensitive information - not for public disclosure."

Attachment: As stated

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